

1 **VALIDATION OF NETWORK COMMUNICATION TUNNELS**

2 **ABSTRACT OF THE INVENTION**

3 This invention provides methods and apparatus for
4 validating that transformations that are expected to
5 occur in an IP network are indeed occurring as
6 expected. Generally, these transformations establish
7 logical communication tunnels within an IP network
8 between the devices that perform the transformation and
9 the devices that perform the reverse transformation.
10 The invention is useful to validate the configuration
11 of devices that support a variety of IP transformation
12 methods, including IP-security protocols using the
13 standard Encrypted Secure Payload protocol and
14 Authenticated Header protocols as defined by the IETF.
15 The invention is particularly useful to validate cases
16 in which transformations occur on the full path of a
17 packet traversing between two machines in an IP
18 network, or when the transformations only occur on part
19 of this path.